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Professional Preparation

Clemson University, Clemson, SC	Computer Engineering, Focus: Computer Architecture	Ph.D., 2000
Clemson University, Clemson, SC	Computer Engineering, Minor in Math Science	B.S., 1994

Appointments

2004–present	Computer Scientist	Mathematics and Computer Science Division, Argonne National Laboratory
2011–present	Senior Fellow	Computation Institute, The University of Chicago and Argonne National Laboratory
2004–present	Adjunct Assistant Professor	Department of Electrical and Computer Engineering, Clemson University
2004–2011	Fellow	Computation Institute, The University of Chicago and Argonne National Laboratory
2002–2004	Assistant Computer Scientist	Mathematics and Computer Science Division, Argonne National Laboratory
2000–2002	Postdoctoral Researcher	Mathematics and Computer Science Division, Argonne National Laboratory

Current Activities

SciDAC Scientific Data Management Center
Argonne PI and Area Leader for Storage Efficient Access, working with computational scientists and other experts in scientific data management to design, implement, and support data management solutions tailored to the needs of DOE computational science applications. (`http://sdmcenter.lbl.gov`)

SciDAC Institute for Ultra-Scale Visualization
Argonne PI and Associate Director, helping integrate parallel I/O best practice into scalable parallel visualization algorithms to enable better understanding of petascale datasets. (`http://ultravis.org`)

MPICH2 MPI Implementation
Researching and developing highly parallel MPI-IO and datatype processing for MPI implementations. (`http://www.mcs.anl.gov/mpi/mpich2/`)

Argonne Leadership Computing Facility
Aiding in design and review of parallel I/O system for leadership computing machines. (`http://www.alcf.anl.gov/`)

High-End Computing Inter-Agency Working Group (HEC IWG) FSIO
Helping to identify key needs and gaps in current research and development activities in file systems and I/O (FSIO) and organize the community and agencies to address these gaps.

Parallel Virtual File System
Guiding direction of project development, helping coordinate international team of researchers and developers to create a production-quality parallel file system that is also an excellent starting point for parallel I/O research. (`http://www.pvfs.org/`)

Honors and Awards

2011	LSAP 2011 Best Paper award for "Visual Analysis of I/O System Behavior for High End Computing"
2011	MSST 2011 Best Paper award for "Understanding and Improving Computational Science Storage Access through Continuous Characterization"
2009	EuroPVM/MPI 2009 Outstanding Paper award for "Processing MPI Datatypes Outside MPI"
2008	Clemson University College of Engineering and Science Outstanding Young Alumni
2005	R&D 100 Award Winner for MPICH2
2004	Presidential Early Career Award for Scientists and Engineers Dept. of Energy Office of Science Early Career Scientist and Engineer Award
2000–2002	Argonne National Laboratory Enrico Fermi Scholar
1999	USENIX 2000 Best Paper award for "PVFS: A Parallel File System for Linux Clusters"
1996–1999	NASA Graduate Student Research Program Fellow

Professional Activities

IEEE Cluster steering committee 2010–2011; PC 2003, 2006, 2009-2011; reviewer 2002

EuroMPI PC 2010–2011; session chair 2006

SciDAC Center for Scalable Application Development Software (CScADS) Workshop organizer 2008–2011

International Workshop on Runtime and Operating Systems for Supercomputers (ROSS) PC 2011

USENIX Conference on File and Storage Technologies (FAST) PC 2011; reviewer 2005

IEEE Symposium on Large Scale Data Analysis and Visualization (LDAV) PC 2011

Parallel Data Storage Workshop (PDSW) PC 2009, 2010

NSF review panelist 2006, 2007, 2010

International Conference on Distributed Computing Systems (ICDCS) PC 2010

International Conference on Parallel and Distributed Systems (ICPADS) PC 2010

SciDAC Conference PC 2006, 2009, 2010

IEEE Transactions in Parallel and Distributed Systems reviewer 2003-2010

Computational Science and Discovery editorial board 2010

Workshop on Interfaces and Abstractions for Scientific Data Storage (IASDS) workshop chair 2009

International Journal of High Performance Computing reviewer 2009

DOE/ASCR 2007 Visualization and Analytics Workshop co-chair

IPDPS reviewer 2002, 2007

SC storage co-chair 2011; PC 2004, 2007–2009; reviewer 2003

DOE Office of Science ASCR PI Meeting steering committee 2008

International Conference on Parallel Processing (ICPP) PC 2007, 2009

DOE SBIR reviewer 2007, 2009

International Journal of Computers and Their Applications (IJCA) reviewer 2006

Journal of Parallel and Distributed Computing reviewer 2003, 2006

Journal of Parallel Computing reviewer 2005

High Performance Distributed Computing Conference reviewer 2005

DOE Office of Science Early Career Principal Investigator program reviewer 2005

NASA Computing, Networking, and Information Systems R&D activities reviwer 2004

Special issue of Cluster Computing Journal reviewer 2003

DOE Office of Science Early Career program reviewer 2002

Supervisory and Mentoring Activities

- Ph.D. thesis committee member for Phil Carns (2005), Murali Vilayannur (2005), Avery Ching (2007), Dries Kimpe (2008), Sumit Narayan (2010), Arifa Nisar (2010), Ning Liu (TBD), and Jing Fu (TBD)
- Software programmer supervisor 2003–present
- Postdoctoral researcher supervisor 2004–present
- Summer student supervisor 2001–present

Book Chapters and Journal Articles

[1] R. Ross. Parallel file systems. In D. Padua, editor, *The Encyclopedia of Parallel Computing*. Springer, 2011 (expected).

[2] F. Isaila, J. G. Blas, J. Carretero, R. Latham, and R. Ross. Design and evaluation of multiple level data staging for bluegene systems. *IEEE Transactions on Parallel and Distributed Systems*, Special Issue on Many-Task Computing, January 2011 (to appear).

[3] R. Ross, A. Choudhary, G. Gibson, and W.-K. Liao. Parallel data storage and access. In A. Shoshani and D. Rotem, editors, *Scientific Data Management: Challenges, Technology, and Deployment*. Chapman & Hall/CRC, 2010.

[4] R. Ross, P. Carns, and D. Metheney. Parallel file systems. In Y. Chan, J. Talburt, and T. Talley, editors, *Data Engineering: Mining, Information and Intelligence*. Springer, October 2009.

[5] K.-L. Ma, C. Wang, H. Yu, K. Moreland, J. Huang, and R. Ross. Next-generation visualization technologies: Enabling discoveries at extreme scale. *SciDAC Review*, Spring 2009.

[6] R. Latham, R. B. Ross, and R. Thakur. Implementing MPI-IO atomic mode and shared file pointers using mpi one-sided communication. *Int'l Journal of High Performance Computing Applications*, 21(2):132–143, Summer 2007.

[7] A. Ching, A. Choudhary, W. K. Liao, R. Ross, and W. Gropp. Evaluating structured I/O methods for parallel file systems. *International Journal of High Performance Computing and Networking*, 2:133–145, 2004.

[8] R. B. Ross and W. B. L. III. Server-side scheduling in cluster parallel I/O systems. In C. Cerin and H. Jin, editors, *Parallel I/O for Cluster Computing*, pages 157–178. Kogan Page Science, Sterling, VA, 2004.

[9] W. B. L. III and R. B. Ross. Parallel I/O and the Parallel Virtual File System. In W. Gropp, E. Lusk, and T. Sterling, editors, *Beowulf Cluster Computing with Linux, second edition*, pages 493–534. MIT Press, Cambridge, MA, 2003.

[10] W. B. L. III and R. B. Ross. PVFS: Parallel Virtual File System. In T. Sterling, editor, *Beowulf Cluster Computing with Linux*, pages 391–429. MIT Press, Cambridge, MA, 2002.

Refereed Proceedings

[1] W. Tantisiriroj, S. Patil, G. Gibson, S. W. Son, S. J. Lang, and R. B. Ross. On the duality of data-intensive file system design: Reconciling HDFS and PVFS. In *Proceedings of the International Conference for High Performance Computing, Networking, Storage and Analysis (SC11)*, Seattle, WA, November 2011 (to appear).

[2] S. Lakshminarasimhan, J. Jenkins, I. Arkatkar, Z. Gong, H. Kolla, S.-H. Ku, S. Ethier, J. Chen, C. Chang, S. Klasky, R. Latham, R. Ross, and N. F. Samatova. ISABELA-QA: Query-driven analytics with ISABELA-compressed extreme-scale scientific data. In *Proceedings of the International Conference on High Performance Computing, Networking, Storage, and Analysis (SC11)*, Seattle, WA, November 2011 (to appear).

[3] S. Kumar, V. Vishwanath, P. Carns, B. Summa, G. Scorzelli, V. Pascucci, R. Ross, J. Chen, H. Kolla, and R. Grout. PIDX: Efficient parallel I/O for multi-resolution multi-dimensional scientific datasets. In *Proceedings of IEEE Cluster 2011*, Austin, TX, September 2011 (to appear).

[4] C. Muelder, C. Sigovan, K.-L. Ma, J. Cope, S. Lang, P. B. Kamil Iskra, and R. Ross. Visual analysis of I/O system behavior for high end computing. In *Proceedings of the Workshop on Large-Scale System and Application Performance (LSAP 2011)*, June 2011.

[5] P. Carns, K. Harms, W. Allcock, C. Bacon, R. Latham, S. Lang, and R. Ross. Understanding and improving computational science storage access through continuous characterization. In *Proceedings of 27th IEEE Conference on Mass Storage Systems and Technologies (MSST 2011)*, May 2011.

[6] S. W. Son, S. Lang, R. Latham, R. Ross, and R. Thakur. Reliable MPI-IO through layout-aware replication. In *Proceedings of the IEEE International Workshop on Storage Network Architecture and Parallel I/O*, May 2011.

[7] T. Peterka, R. Ross, B. Nouanesengsey, T.-Y. Lee, H.-W. Shen, W. Kendall, and J. Huang. A study of parallel particle tracing for steady-state and time-varying flow fields. In *Proceedings of the IEEE International Parallel and Distributed Processing Symposium*, Anchorage, AK, May 2011.

[8] V. Vishwanath, M. Hereld, K. Iskra, D. Kimpe, V. Morozov, M. E. Papka, R. Ross, and K. Yoshii. Accelerating I/O forwarding in IBM Blue Gene/P systems. In *Proceedings of Supercomputing*, November 2010.

[9] S. Kumar, V. Pascucci, V. Vishwanath, P. Carns, R. Latham, T. Peterka, M. Papka, and R. Ross. Towards parallel access of multi-dimensional, multiresolution scientific data. In *Proceedings of 2010 Petascale Data Storage Workshop*, November 2010.

[10] K. Ohta, D. Kimpe, J. Cope, K. Iskra, R. Ross, and Y. Ishikawa. Optimization techniques at the I/O forwarding layer. In *Proceedings of the IEEE International Conference on Cluster Computing*, September 2010.

[11] D. Kimpe, D. Goodell, and R. Ross. MPI datatype marshalling: A case study in datatype equivalence. In *Proceedings of EuroMPI*, September 2010.

[12] P. Carns, R. Ross, and S. Lang. Object storage semantics for replicated concurrent-writer file systems. In *Proceedings of the Workshop on Interfaces and Abstractions for Scientific Data Storage*, September 2010.

[13] A. Shoshani, S. Klasky, and R. Ross. Scientific data management: Challenges and approaches in the extreme scale era. In *SciDAC 2010, Journal of Physics: Conference Series*, Chattanooga, TN, July 2010.

[14] J. Wozniak, S. W. Son, and R. Ross. Distributed object storage rebuild analysis via simulation with gobs. In *Workshop on Fault-Tolerance for HPC at Extreme Scale*, June 2010.

[15] J. Cope, K. Iskra, D. Kimpe, and R. Ross. Grids and HPC: Not as different as you might think? In *PARA 2010*, June 2010.

[16] S. W. Son, S. Lang, P. Carns, R. Ross, R. Thakur, B. Ozisikylimaz, P. Kumar, W.-K. Liao, and A. Choudhary. Enabling active storage on parallel I/O software stacks. In *Proceedings of the IEEE Symposium on Mass Storage Systems and Technologies*, May 2010.

[17] W. Kendall, T. Peterka, J. Huang, H.-W. Shen, and R. Ross. Accelerating and benchmarking radix-k image compositing at large scale. In *Proceedings of the Eurographics Symposium on Parallel Graphics and Visualization*, May 2010.

[18] W. Kendall, M. Glatter, J. Huang, T. Peterka, R. Latham, and R. Ross. Terascale data organization for discovering multivariate climatic trends. In *Proceedings of Supercomputing*, November 2009.

[19] T. Peterka, D. Goodell, R. Ross, H.-W. Shen, and R. Thakur. A configurable algorithm for parallel image-compositing applications. In *Proceedings of Supercomputing*, November 2009.

[20] S. Lang, P. Carns, R. Latham, R. Ross, K. Harms, and W. Allcock. I/O performance challenges at leadership scale. In *Proceedings of Supercomputing*, November 2009.

[21] S. Narayan, J. Chandy, S. Lang, P. Carns, and R. Ross. Uncovering errors: The cost of detecting silent data corruption. In *Proceedings of the Petascale Data Storage Workshop*, November 2009.

[22] J. Blas, F. Isaila, J. Carretero, R. Latham, and R. Ross. Multiple-level MPI file write-back and prefetching for Blue Gene systems. In *Proc. of the 16th European PVM/MPI Users' Group Meeting (Euro PVM/MPI 2009)*, Espoo, Finland, September 2009.

[23] R. Ross, R. Latham, W. Gropp, E. Lusk, and R. Thakur. Processing MPI datatypes outside MPI. In *Proc. of the 16th European PVM/MPI Users' Group Meeting (Euro PVM/MPI 2009)*, Espoo, Finland, September 2009.

[24] T. Peterka, H. Yu, R. Ross, K.-L. Ma, and R. Latham. End-to-end study of parallel volume rendering on the IBM Blue Gene/P. In *Proc. ICPP 09*, Vienna, Austria, September 2009.

[25] K. Gao, W. keng Liao, A. Nisar, A. Choudhary, R. Ross, and R. Latham. Using subfiling to improve programming flexibility and performance of parallel shared-file I/O. In *Proc. ICPP 09*, Vienna, Austria, September 2009.

[26] P. Carns, R. Latham, R. Ross, K. Iskra, S. Lang, and K. Riley. 24/7 characterization of petascale I/O workloads. In *Proceedings of the First Workshop on Interfaces and Abstractions for Scientific Data Storage (IASDS)*, New Orleans, LA, September 2009.

[27] K. Gao, W. keng Liao, A. Choudhary, R. Ross, and R. Latham. Combining I/O operations for multiple array variables in parallel netCDF. In *Proceedings of 2009 Workshop on Interfaces and Architectures for Scientific Data Storage*, New Orleans, LA, September 2009.

[28] S. Lang, R. Latham, D. Kimpe, and R. Ross. Interfaces for coordinated access in the file system. In *Proceedings of 2009 Workshop on Interfaces and Architectures for Scientific Data Storage*, New Orleans, LA, September 2009.

[29] N. Ali, P. Carns, K. Iskra, D. Kimpe, S. Lang, R. Latham, and R. Ross. Scalable I/O forwarding framework for high-performance computing systems. In *IEEE International Conference on Cluster Computing (Cluster 2009)*, New Orleans, LA, September 2009.

[30] T. Peterka, R. Ross, H.-W. Shen, K.-L. Ma, W. Kendall, and H. Yu. Parallel visualization on leadership computing resources. In *SciDAC 2009, Journal of Physics: Conference Series*, San Diego, CA, July 2009.

[31] A. Choudhary, W.-K. Liao, K. Gao, A. Nisar, R. Ross, R. Thakur, and R. Latham. Scalable I/O and analytics. In *SciDAC 2009, Journal of Physics: Conference Series*, San Diego, CA, July 2009.

[32] F. Isaila, J. G. Blas, J. Carretero, R. Latham, S. Lang, and R. Ross. Latency hiding file I/O for Blue Gene systems. In *Proceedings of the 9th IEEE International Symposium on Cluster Computing and the Grid*, May 2009.

[33] P. Carns, S. Lang, R. Ross, M. Vilayannur, J. Kunkel, and T. Ludwig. Small-file access in parallel file systems. In *Proceedings of the 23rd IEEE International Parallel and Distributed Processing Symposium*, April 2009.

[34] G. Grider, J. Nunez, J. Bent, S. Poole, R. Ross, and E. Felix. Coordinating government funding of file system and I/O research through the high end computing university research activity. In *SIGOPS Operating Systems Review*, January 2009.

[35] T. Peterka, R. Ross, H. Yu, K. Ma, R. Kooima, and J. Girado. Autostereoscopic display of large-scale scientific visualization. In *Proceedings of SPIE SD&A XX Conference*, San Jose, CA, January 2009.

[36] T. Peterka, R. Ross, H. Yu, K. Ma, W. Kendall, and J. Huang. Assessing and improving large-scale parallel volume rendering on the IBM Blue Gene/P. In *Proceedings of Supercomputing 2008 Ultrascale Visualization Workshop*, Austin, TX, November 2008.

[37] W. Gropp, D. Kimpe, R. B. Ross, R. Thakur, and J. L. Träff. Self-consistent MPI-IO performance requirements and expectations. In *Proc. of the 15th European PVM/MPI Users' Group Meeting (Euro PVM/MPI 2008)*, September 2008.

[38] P. Gu, J. Wang, and R. Ross. Bridging the gap between parallel file systems and local file systems: A case study with PVFS. In *37th International Conference on Parallel Processing*, pages 554–561, September 2008.

[39] R. Ross, T. Peterka, H. Shen, Y. Hong, K. Ma, H. Yu, and K. Moreland. Parallel I/O and visualization at extreme scale. In *SciDAC 2008, Journal of Physics: Conference Series*, July 2008.

[40] T. Peterka, H. Yu, R. Ross, and K. Ma. Parallel volume rendering on the IBM Blue Gene/P. In *Proceedings of Eurographics Symposium on Parallel Graphics and Visualization 2008 (EGPGV08)*, Crete, Greece, April 2008.

[41] A. Ching, W. Liao, A. Choudhary, R. Ross, and L. Ward. Noncontiguous locking techniques for parallel file systems. In *Proceedings of the 2007 ACM/IEEE conference on Supercomputing*, November 2007.

[42] D. Kimpe, R. Ross, S. Vandewalle, and S. Poedts. Transparent log-based data storage in MPI-IO applications. In *Proc. of the 14th European PVM/MPI Users' Group Meeting (Euro PVM/MPI 2007)*, September 2007.

[43] R. Latham, W. Gropp, R. B. Ross, and R. Thakur. Extending the MPI-2 generalized request interface. In *Proc. of the 14th European PVM/MPI Users' Group Meeting (Euro PVM/MPI 2007)*, pages 223–232, September 2007.

[44] K.-L. Ma, R. B. Ross, J. Huang, G. Humphreys, N. Max, K. Moreland, J. Owens, and H.-W. Shen. Ultra-scale visualization: Research and education. In *SciDAC 2007, Journal of Physics: Conference Series*, 2007.

[45] A. Shoshani, I. Altintas, A. Choudhary, T. Critchlow, C. Kamath, B. Ludascher, J. Nieplocha, S. Parker, R. B. Ross, N. Samatova, and M. Vouk. SDM center technologies for accelerating scientific discoveries. In *SciDAC 2007, Journal of Physics: Conference Series*, 2007.

[46] K. Coloma, A. Ching, A. Choudhary, W.-K. Liao, R. Ross, R. Thakur, and H. L. Ward. A new flexible MPI collective I/O implementation. In *Proceedings of the IEEE International Conference on Cluster Computing (Cluster 2006)*, September 2006.

[47] R. Latham, R. B. Ross, and R. Thakur. Can MPI be used for persistent parallel services? In *Proceedings of the 13th European PVM/MPI Users' Group Meeting (Euro PVM/MPI 2006)*, pages 275–284, September 2006.

[48] J. Lee, R. B. Ross, S. Atchley, M. Beck, , and R. Thakur. MPI-IO/L: Efficient remote I/O for MPI-IO via logistical networking. In *Proceedings of the 20th IEEE International Parallel and Distributed Processing Symposium (IPDPS 2006)*, Rhodes Island, Greece, April 2006.

[49] H. Yu, R. Sahoo, C. Howson, G. Almasi, J. Castanos, M. Gupta, J. Moreira, J. Parker, T. Engelsiepen, R. Ross, et al. High performance file I/O for the Blue Gene/L supercomputer. In *The Twelfth International Symposium on High-Performance Computer Architecture*, pages 187–196, 2006.

[50] P. H. Carns, W. B. Ligon III, R. B. Ross, and P. Wyckoff. BMI: A network abstraction layer for parallel I/O. In *Workshop on Communication Architecture for Clusters, Proceedings of IPDPS '05*, Denver, CO, April 2005.

[51] R. Ross, R. Latham, W. Gropp, R. Thakur, and B. Toonen. Implementing MPI-IO atomic mode without file system support. In *Proceedings of CCGrid 2005*, May 2005.

[52] R. Latham, R. Ross, and R. Thakur. Implementing MPI-IO shared file pointers without file system support. In *Proceedings of EuroPVM/MPI 2005*, September 2005.

[53] R. Thakur, R. Ross, and R. Latham. Implementing byte-range locks using MPI one-sided communication. In *Proceedings of the 12th European PVM/MPI Users' Group Meeting (Euro PVM/MPI 2005), Recent Advances in Parallel Virtual Machine and Message Passing Interface, Lecture Notes in Computer Science, LNCS 3666, Springer*, pages 119–128, September 2005.

[54] R. B. Ross, R. Thakur, and A. Choudhary. Achievements and challenges for I/O in computational science. In *SciDAC 2005: Scientific Discovery Through Advanced Computing, Journal of Physics: Conference Series*, pages 501–509, 2005.

[55] R. Latham, R. Ross, and R. Thakur. The impact of file systems on MPI-IO scalability. In *Proceedings of EuroPVM/MPI 2004*, September 2004.

[56] W. Gropp, R. B. Ross, , and N. Miller. Providing efficient I/O redundancy in MPI environments. In *Proceedings of EuroPVM/MPI 2004*, September 2004.

[57] J. Lee, X. Ma, R. B. Ross, R. Thakur, and M. Winslett. RFS: Implementing efficient and flexible remote file access for MPI-IO. In *Proceedings of Cluster 2004*, September 2004.

[58] J. Wu, P. Wyckoff, D. Panda, and R. Ross. Unifier: Unifying cache management and communication buffer management for PVFS over infiniband. In *Proceedings of CCGrid2004*, Chicago, April 2004.

[59] M. Vilayannur, R. B. Ross, P. H. Carns, R. Thakur, and A. Sivasubramaniam. On the performance of the POSIX I/O interface to PVFS. In *12th Euromicro Conference on Parallel, Distributed and Network-Based Processing (PDP'04)*, pages 332–339, Coruna, Spain, February 2004.

[60] A. Ching, A. Choudhary, W. Liao, R. Ross, and W. Gropp. Efficient structured data access in parallel file systems. In *Proceedings of Cluster 2003*, Hong Kong, November 2003.

[61] J. Li, W. keng Liao, A. Choudhary, R. Ross, R. Thakur, W. Gropp, R. Latham, A. Siegel, B. Gallagher, , and M. Zingale. Parallel netCDF: A high-performance scientific I/O interface. In *Proceedings of SC2003*, November 2003.

[62] R. Ross, N. Miller, and W. Gropp. Implementing fast and reusable datatype processing. In *Proceedings of the 10th EuroPVM/MPI Conference*, September 2003.

[63] A. Ching, A. Choudhary, K. Coloma, W. keng Liao, R. Ross, and W. Gropp. Noncontiguous I/O accesses through MPI-IO. In *Proceedings of the Third IEEE/ACM International Symposium on Cluster Computing and the Grid (CCGrid2003)*, May 2003.

[64] M. Vilayannur, A. Sivasubramaniam, M. Kandemir, R. Thakur, and R. Ross. Discretionary caching for I/O on clusters. In *Proceedings of the Third IEEE/ACM International Symposium on Cluster Computing and the Grid*, pages 96–103, Tokyo, Japan, May 2003. IEEE Computer Society Press.

[65] A. Ching, A. Choudhary, W. keng Liao, R. Ross, and W. Gropp. Noncontiguous I/O through PVFS. In *Proceedings of the 2002 IEEE International Conference on Cluster Computing*, September 2002.

[66] R. Ross, D. Nurmi, A. Cheng, and M. Zingale. A case study in application I/O on linux clusters. In *Proceedings of SC2001*, November 2001.

[67] P. H. Carns, W. B. Ligon III, R. B. Ross, and R. Thakur. PVFS: A parallel file system for linux clusters. In *Proceedings of the 4th Annual Linux Showcase and Conference*, pages 317–327, Atlanta, GA, October 2000. USENIX Association.

[68] W. B. Ligon III and R. B. Ross. An overview of the parallel virtual file system. In *Proceedings of the 1999 Extreme Linux Workshop*, Monterey, CA, June 1999.

[69] P. H. Carns, W. B. Ligon III, S. McMillan, and R. B. Ross. An evaluation of message passing implementations on Beowulf workstations. In *Proceedings of the IEEE Aerospace Conference*, Snowmass, CO, March 1999.

[70] M. Cettei, W. Ligon, and R. Ross. Support for parallel out of core applications on Beowulf workstations. In *Proceedings of the 1998 IEEE Aerospace Conference*, March 1998.

[71] R. Geist and R. Ross. Disk scheduling revisited: Can $O(N^2)$ algorithms compete? In *Proceedings of the 35th Annual ACM Southeast Conference*, April 1997.

[72] W. B. Ligon III and R. B. Ross. Implementation and performance of a parallel file system for high performance distributed applications. In *Proceedings of the Fifth IEEE International Symposium on High Performance Distributed Computing (HPDC)*, Syracuse, NY, August 1996.

Invited Talks at Major Conferences

[1] R. B. Ross. Storage in an exascale world. Presented at the IEEE International Workshop on Storage Network Architecture and Parallel I/Os (SNAPI), Incline Village, NV, May 2010.

[2] R. B. Ross. Visualization and parallel I/O at extreme scale. Presented at the 2008 SciDAC Conference, Seattle, WA, July 2008.

[3] R. B. Ross. Achievements and challenges for I/O in computational science. Presented at the 2005 SciDAC Conference, San Francisco, CA, June 2005.

[4] R. B. Ross. PVFS: The parallel virtual file system. Presented at the Storage Networking Industry Association Developer Solutions Conference & Showcase, San Jose, CA, August 2005.

[5] R. B. Ross. The parallel I/O software crisis. Presented at ISC, Heidelberg, Germany, June 2005.

[6] R. B. Ross. PVFS2: Parallel I/O for scientific applications. Presented at ClusterWorld 2004, San Jose, CA, 2004.

[7] R. B. Ross. Providing parallel I/O on linux clusters. Presented at the Second Annual Linux Storage Management Workshop, Miami, FL, October 2000.

Tutorials

[1] R. Latham, R. Ross, M. Unangst, and B. Welch. Parallel I/O in practice. SC 2010, New Orleans, LA, November 2010.

[2] W. Gropp, E. Lusk, R. Ross, and R. Thakur. Advanced MPI. SC2010, New Orleans, LA, November 2010.

[3] R. Latham, R. Ross, M. Unangst, and B. Welch. Parallel I/O in practice. SC 2009, Portland, OR, November 2009.

[4] W. Gropp, E. Lusk, R. Ross, and R. Thakur. Advanced MPI. SC2009, Portland, OR, November 2009.

[5] R. Latham and R. Ross. Parallel I/O in practice. SciDAC Tutorials Day, San Diego, CA, June 2009.

[6] R. Latham, R. Ross, M. Unangst, and B. Welch. Parallel I/O in practice. SC 2008, Austin, TX, November 2008.

[7] W. Gropp, E. Lusk, R. Ross, and R. Thakur. Advanced MPI. SC2008, Austin, TX, November 2008.

[8] R. Latham, W. Loewe, R. Ross, and R. Thakur. Parallel I/O in practice. SC2007, Reno, NV, November 2007.

[9] W. Gropp, E. Lusk, R. Ross, and R. Thakur. Advanced MPI. SC2007, Reno, NV, November 2007.

[10] R. Latham and R. Ross. Parallel I/O: Not your job. CScADS Workshop on Petascale Architectures and Performance Strategies, Snowbird, UT, July 2007.

[11] R. Latham and R. Ross. Parallel I/O in practice. SciDAC 2007 Tutorials Workshop, Boston, MA, June 2007.

[12] R. Latham, W. Loewe, R. Ross, and R. Thakur. Parallel I/O in practice. SC2006, Tampa, FL, November 2006.

[13] W. Gropp, E. Lusk, R. Ross, and R. Thakur. Advanced MPI: I/O and one-sided communication. SC2006, Tampa, FL, November 2006.

[14] R. Latham and R. Ross. Parallel I/O in practice. Cluster 2006, Barcelona, Spain, September 2006.

[15] R. Ross and J. Worringen. High-performance parallel I/O. EuroPVM/MPI 2006, Bonn, Germany, September 2006.

[16] R. Ross. Parallel I/O in practice. Sandia National Laboratories, Albuquerque, NM, July 2006.

[17] R. Latham, W. Loewe, R. Ross, and R. Thakur. Parallel I/O in practice. SC2005, Seattle, WA, November 2005.

[18] W. Gropp, E. Lusk, R. Ross, and R. Thakur. Advanced MPI: I/O and one-sided communication. SC2005, Seattle, WA, November 2005.

[19] R. Latham and R. Ross. High-performance I/O for scientic applications. CCGrid 2005, Cardi, UK, May 2005.

[20] W. Gropp, E. Lusk, R. Ross, and R. Thakur. Advanced MPI: I/O and one-sided communication. SC2004, Pittsburgh, PA, November 2004.

[21] R. B. Ross and R. Thakur. Using MPI-2: A tutorial on advanced features of the message-passing interface standard. CCGrid 2004, Chicago, April 2004.

[22] R. B. Ross. High-performance I/O for scientic applications. ClusterWorld 2004, San Jose, CA, April 2004.

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